

**WHAT IS CLAIMED IS:**

1. An ADIP demodulation apparatus, which is applied to an optical disk driver to generate ADIP information according to a wobble signal, the ADIP demodulation apparatus comprising:
  - 5 a slicing unit for receiving the wobble signal and generating a wobble pulse by slicing the wobble signal;
  - a phase locked loop for generating a reference wobble signal with the same frequency and phase as the wobble pulse according to the wobble pulse;
  - a channel bit generator for generating a channel bit signal according to the reference wobble signal and the wobble pulse; and
  - 10 a decoder for decoding the ADIP information according to the channel bit signal;wherein the channel bit generator generates a difference signal between the reference wobble signal and the wobble pulse and generates the channel bit signal according to the difference signal.
- 15 2. The ADIP demodulation apparatus according to claim 1, wherein the channel bit generator comprises:
  - a bit comparator for receiving the wobble pulse and the reference wobble signal and generating the difference signal;
  - 20 a counter for counting the width of high level of the difference signal corresponding to each wobble pulse using a counting clock and outputting a count value; and
  - a decision unit for comparing the count value with a threshold value and then outputting the channel bit signal.

3. The ADIP demodulation apparatus according to claim 2, further comprising a reference clock generator for generating the counting clock according to the wobble pulse.
4. The ADIP demodulation apparatus according to claim 3, wherein the ADIP  
5 information is a sync signal when the channel bit signal sequence is 11110000 or its similar sequence.
5. The ADIP demodulation apparatus according to claim 4, wherein the ADIP information is data 0 when the channel bit signal sequence is 10000011 or its similar sequence.
- 10 6. The ADIP demodulation apparatus according to claim 5, wherein the ADIP information is data 1 when the channel bit signal sequence is 10001100 or its similar sequence.
7. An ADIP demodulation method, which is applied to an optical disk driver to generate ADIP information according to a wobble signal, the ADIP  
15 demodulation method comprising the steps of:  
generating a wobble pulse by slicing the wobble signal;  
generating a reference wobble signal with the same frequency and phase as the wobble pulse;  
generating a difference signal by comparing the reference wobble signal with  
20 the wobble pulse;  
generating a channel bit signal according to the difference to determine whether the channel bit signal is H or L; and  
decoding the channel bit signal to generate the ADIP information.

8. The ADIP demodulation method according to claim 7, wherein the ADIP information is a sync data when the channel bit signal sequence is 11110000 or its similar sequence.

9. The ADIP demodulation method according to claim 8, wherein the ADIP information is data 0 when the channel bit signal sequence is 10000011 or its similar sequence.

10. The ADIP demodulation method according to claim 9, wherein the ADIP information is data 1 when the channel bit signal sequence is 10001100 or its similar sequence.

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